CALIFORNIA
AGRICULTURAL EXTENSION SERVICE

CIRCULAR 39

FEBRUARY, 1930

The 1930 Agricultural Outlook for California

CONTRIBUTION FROM THE

GIANNINI FOUNDATION OF AGRICULTURAL ECONOMICS

PUBLISHED BY
THE COLLEGE OF AGRICULTURE
UNIVERSITY OF CALIFORNIA

Coöperative Extension work in Agriculture and Home Economics, College of Agriculture, University of California, and United States Department of Agriculture coöperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. B. H. Crocheron, Director, California Agricultural Extension Service.

UNIVERSITY OF CALIFORNIA PRINTING OFFICE
BERKELEY, CALIFORNIA
1930

CONTENTS

THE 1930 AGRICULTURAL OUTLOOK FOR CALIFORNIA*

Prepared under the direction of
H. R. Wellman
with collaboration of
E. W. Braun, E. C. Voorhies, S. W. Shear, and H. E. Erdman

PREFACE

This report presents a summary of the present available facts bearing upon the future economic conditions of important farm products in California. If farmers are to avoid the losses which result from extreme expansion or contraction, they should consider carefully the probable outlook when increasing or decreasing acreage of crops or numbers of livestock. Plans should be made on the most probable outlook and not on the most optimistic outlook. Such an outlook need not be mathematically exact to be helpful. Outlook reports are designed to be of assistance in making plans and not in recording results.

This report does not attempt to advise individual farmers as to what they should or should not do. The statements herein necessarily represent the state point of view and in many instances must be modified to meet local and individual conditions. Many conditions may arise that will nullify the most careful estimates. It is believed, however, that the presentation of the more important facts bearing upon the future economic conditions will be of benefit to farmers in adjusting their production to market demands.

Adjustment of acreage or of breeding plans alone cannot, of course, assure satisfactory profits. Reduction in costs, improvement in quality, and efficiency in marketing are all important considerations. Even in a time of declining prices, some farmers located on land particularly suited to one crop may make more money by growing that crop than by planting another which is on a rising price level but to which the land, climate, or market facilities are ill adapted. Farmers need to consider both the probable future prices, as discussed in this circular, and the costs of production on their own

* Paper No. 9. The Giannini Foundation of Agricultural Economics.

farm, or at least in their own locality. Recent cost and enterprise efficiency studies, made in cooperation with the farm advisors' offices in various counties, are presented in Agricultural Extension Circular 24. Readers of this circular are also referred to that publication.

In the preparation of this outlook report information has been obtained from many sources. The Federal Outlook Report prepared by the Bureau of Agricultural Economics has been quoted extensively for those products grown throughout the United States. The California Cooperative Crop Reporting Service, the Federal-State Division of Markets, many cooperative marketing associations, and commercial companies have furnished much information.

APPLES

According to the Federal Outlook Report the apple industry of the United States has made a considerable recovery from the disturbed conditions which accompanied the rapid and excessive expansion of commercial plantings in the Northwest and other sections about 20 years ago. The drastic adjustments which followed this period of over-planting have gradually placed the industry on a sounder economic basis. There are still sufficient young trees in commercial orchards, however, to maintain production at a high level for a period of years, and in seasons when weather and other growing conditions are especially favorable production will be so heavy as to be burdensome.

In 33 of the states which produce over 90 per cent of the United States apple crop, 25 to 30 per cent of the trees in commercial orchards were less than 9 years old at the beginning of 1928, and 65 to 70 per cent were less than 19 years old. In view of this proportion of young trees in commercial orchards together with the general tendencies toward an increased bearing life and an increased productive capacity per tree, owing to improved orchard management and to the larger proportion of orchards on better locations, it seems reasonable to expect a further increase in commercial production for several years. This prospective increase in commercial production, however, will be partially offset by the declining production in family orchards, which contain nearly one-third of the apple trees in the United States.

Most of the increase in the commercial production of apples is expected to occur in the barreled-apple states. Present indications are that production in the Northwest is near its peak. During the past five years production has averaged only 6 per cent larger than

during the previous five years. Recent plantings in that area have been light and removals in the less favorable sections have continued.

In California the peak of production of Newtowns has apparently been reached. About 93 per cent of the total acreage of Newtowns in 1928 was in bearing while only 7 per cent was nonbearing. Furthermore 24 per cent of the bearing acreage was over 31 years old. On the other hand a further increase in the production of Gravensteins is expected. In 1928 16 per cent of the total acreage of Gravensteins was not in bearing while 21 per cent of the bearing acreage was not in full bearing and only 4 per cent was over 31 years old.

APRICOTS

The outlook for apricots does not justify additional plantings except in those localities where consistently large yields can be obtained at a relatively low cost.

The commercial production of apricots in the United States is practically confined to California. During the past decade there has been a rapid expansion in bearing acreage in this state, rising from 46,100 acres in 1919 to 82,300 acres in 1929, an increase of 36,200 acres or 80 per cent. According to the forecasts of the California Cooperative Crop Reporting Service, the upward trend in bearing acreage will continue for the next three years, but at a slower rate. In 1932 it is estimated that there will be 85,500 acres in bearing, a total increase of 3200 acres over the bearing acreage in 1929, or an increase of 1100 acres a year. The average increase between 1922 and 1929 was over 3000 acres a year, almost three times as large as the average prospective increase during the next three years.

With yields during the coming years equal to the average of recent years the trend of production in 1932 may be expected to be around 210,000 tons. The average annual production during the five years 1925–1929 amounted to 180,000 tons, about 30,000 tons, or 17 per cent, less than we may normally expect three years from now. It is entirely possible, of course, that the production in any given year may be much above the trend. Weather conditions throughout the state as favorable to high yields as in 1923 could easily result in a crop 35 per cent greater than the largest crop ever produced.

A part of the apricot crop has a three-way outlet; it may be dried, canned, or shipped fresh. During the past five years an average of 68 per cent of the commercial crop has been dried, 29 per cent canned, and 3 per cent shipped fresh to eastern markets.

Dried Apricots.—The annual output of dried apricots has increased from an average of 13,000 tons in 1920–1922 to an average of 24,000 tons in 1927–1929, an increase of 9,000 tons or 85 per cent. As a result the prices paid to growers have declined. The trend of prices was at 17 cents a pound in 1921 and at 15 cents a pound in 1928. Prices in 1929 were considerably above the trend, largely a result of the short fruit crop. While the apricot crop was larger in 1929 than in 1928, the production of nearly all other fruits was much smaller.

The future trend in the output of dried apricots may be expected to be upward in view of the prospective increase in total apricot production, but the increase will probably not be as large as in the past. Consequently, it is not likely that there will be as great a downward trend in prices as that which has occurred. It must be expected, of course, that in the future as in the past prices will be generally unprofitable in some years, particularly when a large production of apricots is accompanied by a large production of other fruits.

Exports of dried apricots from the United States were about 4 per cent larger in 1928–1929 than in 1927–1928 and about 35 per cent larger than the average annual exports between 1924–1925 and 1927–1928. A considerable part of the increase in exports since 1924–1925 has gone to Germany. In that year Germany imported only 1540 tons from the United States as against 3870 tons in 1928–1929.

Canning Apricots.—The canning-apricot situation is closely related to the dried-apricot situation. When the price of canning apricots is high, growers send a large proportion of their crop to the canneries; when it is low they dry a larger proportion.

The pack of canned apricots in the state has increased from an average of 2,094,000 cases in 1921–1924 to an average of 3,142,000 cases in 1927–1929, an increase of 50 per cent. This increase in the pack has been accompanied by a downward trend in prices to growers. In 1921 the trend of prices was at $72 a ton and in 1928 at $62 a ton. The 1929 price averaged about $75 a ton, chiefly because of the very short crop of canning peaches.

Growers should not plant additional apricots in the expectation that the high prices received in 1929 will prevail during the coming years. The 1929 canned pack of apricots was over a million cases larger than the 1927 pack, for which growers received $70 a ton. The 1927 pack, however, did not move readily into consumption and about one-third of it was carried over. The pack in 1928 amounted to 2,097,000 cases, but with the carryover from 1927 of 1,002,000 cases

the supply available for consumptipon was approximately equal to the 1927 pack. In order to dispose of that supply canners had to reduce their selling prices below those asked at the beginning of the 1927 season. While the canners' opening prices in 1929 were even higher than in 1927, indications are that the present large pack is not moving readily into consumption. Fortunately, the future increase in the pack of canned apricots is not likely to be as great as in the past. Some increase, however, is in prospect, which may cause a further downward trend in prices.

Exports of canned apricots from the United States were smaller in 1928–29 than in any year since 1923–24. The United Kingdom, although continuing to be the largest foreign market for our canned apricots, was less important this past year than the year before. Only 402,560 cases were exported to the United Kingdom in 1928–29 as against 583,850 cases in 1927–28. On the other hand, exports to France increased from 24,880 cases in 1927–28 to 59,490 cases in 1928–29.

Fresh Apricots.—Although the interstate shipments of fresh apricots have increased gradually, they now afford an outlet for only a small proportion of the crop. The chief limiting factor in shipping fresh apricots to eastern markets is the extreme perishability of the fruit. The necessity for handling them quickly makes it desirable to sell them in the few large auction markets rather than in the many private-sale markets. Consequently, the distribution of fresh apricots has been limited. The widening of the markets depends mainly upon improvement in harvesting, packing, and refrigeration methods. Even if it were possible, however, to find profitable markets for double the present interstate shipments, they would provide an outlet for only a small part of the prospective increase in production.

CHERRIES

Unless the domestic markets for maraschino and glacé cherries can be greatly expanded, it does not appear that large additional plantings of Royal Ann cherries are justified. Nor, in view of the large increase in production already in prospect, does it appear that the acreage of cherries for fresh shipment can be profitably expanded, except in particularly favorable localities.

From 1921 to 1926 there was a gradual increase in the bearing acreage of cherries in California, amounting on the average to almost 400 acres a year. During the past three years the increase has been much more rapid, amounting to about 800 acres a year. Indi-

cations are that this rapid increase will be maintained during the next few years. In 1929 there were 13,260 bearing acres in the state and 5647 nonbearing acres. The California Crop Reporting Service estimates that by 1932 the bearing acreage will amount to 16,300 acres, an increase of 23 per cent over the bearing acreage in 1929.

The production of cherries, however, has not kept pace with the increase in bearing acreage. Conditions have been unfavorable to high yields in the past few years. The average yield per acre for the state as a whole was only 1.33 tons during the past six years, whereas the average yield during the five years from 1919 to 1923 amounted to 1.63 tons. The available information indicates that at least a part of the decline in yield is a temporary and not a permanent condition. Similar periods of low yields followed by periods of higher yields have occurred at two other times during the past 25 years. With yields per acre equal to the average of the past six years, the trend of production in 1932 may be expected to be at around 21,000 tons. But if yields should average as high as they did between 1919 and 1923 the trend of production in 1932 may reach 26,000 tons. The average annual production during the past three years amounted to 15,200 tons.

Fresh Cherries.—Although many of the other western states produce large quantities of sweet cherries for fresh consumption, they do not come on the market until our season is nearly completed. Consequently, they do not compete to any serious extent with our fruit.

The trend of interstate shipment of fresh cherries from this state has been upward, rising from 570 cars in 1921 to 730 cars in 1929, an increase of 33 per cent. This upward trend may be expected to continue, since about 65 per cent of the present nonbearing acreage of cherries in the state is planted to black varieties which are shipped fresh.

Thus far the demand for California fresh cherries has kept pace with the upward trend of shipments. Consequently, there has been no downward trend in prices. Whether the demand for cherries will continue to increase cannot be definitely determined from the data now available. However, there is as yet no evidence that it has been checked. But even with a further increase in demand it does not appear that the level of prices will rise above the average of recent years if the prospective increase in shipments materializes. And if conditions are particularly favorable to large yields there may even be some decline in the trend of prices.

Canned Cherries.—The Royal Ann cherry is the principal variety used for canning, and a considerable part of the Royal Ann crop is so used. As contrasted with our fresh cherries, our canned cherries come in direct competition with those packed in Oregon, Washington, Idaho, and Utah. Some of the states east of the Rocky Mountains also produce large quantities of canning cherries, but their cherries are the sour varieties. Consequently, they do not compete seriously with our sweet cherries. Although there has been a downward trend in the canned pack in this state since 1919, there has been a pronounced upward trend in Oregon and Washington. The increase in those two states has more than offset the decline in California. The total pack of canned cherries of the Pacific Coast has increased about 18 per cent in the past nine years. The increase in the pack of canned cherries, however, has been small as compared with the increases in most of the canned fruits.

The demand for canned cherries has just about kept pace with the relatively small increase in the pack. Consequently, there has been no pronounced downward trend in prices paid to growers.

Unofficial estimates indicate that there are about 2,500 acres of nonbearing Royal Ann trees in the three Pacific Coast states. When this acreage comes into bearing production will be increased. While canning may be expected to provide an outlet for a gradual increase in the supply of Royal Anns, it does not appear that a very large increase in the canned pack can be sold except at lower prices.

Maraschino Cherries.—In recent years the manufacture of maraschino and glacé cherries has provided an annual outlet for more than 5,000,000 pounds of sulfured and brined Royal Ann cherries that were produced on the Pacific Coast. This amount, however, has constituted only a part of the sulfured and brined cherries which the United States annually uses in the manufacture of maraschino and glacé cherries. During the past six years the total imports of cherries, most of which were sulfured and brined cherries that had been stemmed and pitted, amounted to an average of 17,000,000 pounds a year.

GRAPES

The outlook for additional plantings of grapes is unfavorable. Prices are likely to continue at a relatively low level unless further reductions are made in the acreage or large additional markets are developed. Because of the ease with which certain varieties of grapes can be utilized for raisin, table consumption, or juice, any substantial

change in the prices of one class of grapes is likely to be reflected in the prices of the other classes.

As a result of unfavorable weather conditions the 1929 yields per acre in California were about 20 per cent below the average of the past five years. The 1929 crop, which is now estimated to be 1,751,000 tons on a fresh basis, was the smallest since 1924, and only 75 per cent as large as the crops of 1927 and 1928. In each of those two years, however, about 150,000 tons were not harvested. With yields equal to the average of the past five years the total production during the next few years may average only about 5 per cent less than the tonnage harvested in 1927 and 1928.

The total bearing acreage of grapes in the state, which practically doubled between 1919 and 1927, has experienced a small decrease during the past two years. In 1929 there were 639,900 acres in bearing, as against 658,800 acres in 1927, a decrease of 4.4 per cent. By 1931 it is expected that there will be a further decrease in bearing acreage of about 2 per cent. But it appears that heavy production is in prospect during the next few years, whenever weather conditions are favorable to high yields, unless, of course, the prospective rate of decline in bearing acreage is greatly accelerated or the vineyards are much neglected.

Of the total bearing acreage of grapes in California in 1929, 51 per cent was classified as raisin grapes, 28 per cent as juice grapes, and 21 per cent as table grapes.

Raisins.—The bearing acreage of raisin grapes in California increased from 170,000 acres in 1919 to 347,200 acres in 1926, when the peak in bearing acreage was reached. Since 1926 there has been a gradual decline. In 1929 the bearing acreage was 21,100 acres smaller than in 1926, a decrease of 6 per cent. This decline will probably continue during the next few years. By 1931 it is expected that the bearing acreage will be around 311,700 acres, 4 per cent smaller than in 1929 and 11 per cent smaller than in 1926.

The production of raisins in California increased from an average of 224,000 tons in 1921–1923 to an average of 281,000 tons in 1926–1928. During the same period there was also a substantial increase in raisin and currant production in foreign countries. The total production of raisins in Australia, Smyrna, and Spain amounted to an average of 72,000 tons in 1921–1923 as against an average of 104,000 tons in 1926–1928, and the total production of currants in Greece and Australia increased from an average of 131,000 tons in 1921–1923 to an average of 173,000 tons in 1926–1928.

As a result of the large world production of raisins and currants, prices of California raisins have been relatively low during recent years. In no year since 1921 have the average prices paid to growers been as high as 4 cents a pound and in four of the past eight years prices have been 3 cents a pound or less. Prices in 1929 averaged about 3.5 cents a pound. The 1929 world crop of currants and raisins is now estimated to be 465,200 tons, about 17 per cent less than the average crop from 1926 to 1928.

The relatively low prices of raisins since 1921 led to a substantial increase in the fresh shipments of both Thompson Seedless and Muscats. According to estimates of the California Cooperative Crop Reporting Service, an average of 55,000 tons of raisin grapes were marketed fresh during the three years of 1920–1922 as against an average of 278,000 tons during the three years of 1926–1928. The total fresh shipments in carlots of Muscats and Thompson Seedless have increased from 4700 cars in 1921 to an average of 17,000 cars during the past three years.

Table Grapes.—The large increase in the fresh shipments of raisin grapes relieved the raisin situation to some extent but augmented the rapidly increasing shipments of table and juice stock. The total interstate shipments of fresh grapes rose steadily from 30,200 cars in 1921 to 71,100 cars in 1925. In 1927 and 1928 shipments were even larger than in 1925, but in 1929 they were about 20 per cent smaller.

As a result of the large increase in fresh shipments between 1921 and 1928 there was a pronounced decline in prices. The delivered-auction prices of the principal varieties of grapes average $2.11 a lug in 1921 as against an average of $1.19 a lug during the two years of 1927 and 1928. In 1929 prices averaged $1.36 a lug, the highest since 1925.

The average delivered-auction prices of the two principal varieties of table grapes, Malagas and Tokays, declined from $2.13 a lug in 1921 to $1.26 a lug in 1925. Since 1925, however, there has been no further downward trend. During the three years of 1926–1928 prices have averaged $1.27 a lug. In 1929 Malages and Tokays brought an average of $1.39 a lug, the highest prices that have been received since 1924. Shipments of table stock up to November 10, 1929, amounted to 18,328 cars as against 23,005 cars for the same period in 1928. Most of that decrease occurred in the shipments of Tokays, Malagas, and Emperors. Shipments of Thompson Seedless in 1929 were almost 1000 cars larger than in 1928. During the past few years Thompson Seedless have gained considerable favor as a table

grape. In 1925 only 2757 cars of this variety were shipped as table stock, as against 5020 cars in 1929. Delivered-auction prices of Thompson Seedless in 1929 averaged $1.48 a lug, as compared with $1.37 a lug for Malagas, $1.41 a lug for Tokays, and $1.62 a lug for Emperors.

The bearing acreage of table grapes in the state increased from 60,000 acres in 1921 to 143,000 acres in 1927, when the peak in bearing acreage was reached. In 1929 the bearing acreage was 10,100 acres smaller than in 1927. This downward trend is likely to continue during the next few years, although the amount of the decline from 1929 to 1931 is estimated to be only 2900 acres, or 2 per cent.

Juice Grapes.—Until 1927 juice grapes commanded a premium over table grapes. From 1924 to 1927, however, there was a gradual decrease in that premium and during the past two years table grapes have brought higher prices than juice grapes. In 1921 the delivered-auction prices of Alicante Bouschets, Carignanes, and Zinfandels average $2.46 a lug. By 1928 the average prices of these three varieties had declined to $1.09 a lug. In 1929 as the result of smaller shipments prices advanced to an average of $1.19 a lug. Shipments of all juice stock in 1929 amounted to 35,211 cars as against 41,845 cars in 1928.

There is some evidence that the demand for juice grapes has fallen off in the last two years. In 1928 and 1929 shipments of juice stock were smaller than from 1925 to 1927, yet the delivered-auction prices were lower. Whether this apparent slackening in demand will prove permanent or only temporary is uncertain. But in view of the heavy production of juice grapes that is in prospect, indications are that the next few years may be difficult ones.

As contrasted with the prospective decline in the bearing acreage of raisin and table grapes it is expected that the bearing acreage of juice grapes will be even larger during the next few years than in 1929. By 1931 it is estimated that there will be 187,000 acres of juice grapes in bearing, approximately 6100 acres more than in 1929.

PEACHES

Clingstone.—The outlook for clingstone peaches does not warrant large additional plantings at this time. The production already in prospect may be difficult to sell at prices profitable to the majority of the growers. Unless many trees are removed or the orchards are much neglected, the peak of production is not likely to be reached

until 1931 or 1932. At that time it is probable that the trend of production will be about 15 per cent higher than in 1928.

The total acreage of clingstone peaches in California in 1929 amounted to about 86,600 acres. Of that amount 76,000 acres were classified as bearing and 10,600 acres as nonbearing. Approximately 12,800 acres, or 17 per cent of the bearing acreage, were only four and five years of age, and consequently, will not be in full bearing for several years. Furthermore, only 23,100 acres, or 30 per cent of the bearing acreage, were over ten years of age. It is evident, therefore, that the normal loss in acreage as the result of old age is not likely to be large during the next few years. It is entirely possible, of course, that many trees might be taken out earlier than normally. In 1928 approximately 4900 acres were removed. About 1500 acres, however, would normally have come out in that year.

The canned pack of peaches in California, which is practically equivalent to the national pack, increased from nearly 6,000,000 cases in 1921 to almost 15,000,000 cases in 1928. This great increase, however, was retarded by the steady decline in the quantity of freestones canned. In 1921 about 1,633,000 cases of freestones were canned, in 1928 only 164,000 cases. Only a small further decline in the freestone pack can occur, and in some years, as in 1929, it may even be expanded.

As a result of the pronounced upward trend in the pack there was a downward trend in prices paid to growers, falling from an average of $46 a ton in 1921–1922 to an average of $21 a ton in 1927–1928. The high price paid for clingstone peaches in 1929 can be directly attributed to the very short crop, which amounted to only 179,000 tons as against a harvest tonnage of 344,000 tons in 1928.

It is impossible to measure accurately the future trend of prices with the data now available. However, the fact that in the past it has been necessary to lower prices in order to induce people to eat more canned peaches, together with the prospective increase in production, indicates that the next few years may be trying ones. After that, however, the situation may improve. There probably will be some increase in the demand for canned peaches, and if a small downward trend in production occurs after about 1932, such as is now indicated, the situation in later years will be decidedly more favorable. The favorable prospect, however, is in part based upon the assumption that plantings will be relatively small. There is probably no better way of preventing the clingstone peach industry from returning to a more favorable position than by planting a large additional acreage during the next few years.

Freestones.—As contrasted with the rapid increase in the production of clingstone peaches, our production of freestone peaches has actually declined during recent years. The average annual production of freestones in California during the three years of 1920–1922 amounted to 227,000 tons as against an average of 196,000 tons during the three years of 1926–1928, a decrease of 14 per cent. All of this decline has been in canning peaches. During the three years of 1920–1922 an average of 35,000 tons of freestones were canned, while in 1928 less than 4000 tons were canned. The output of dried peaches and the interstate shipments of fresh peaches have remained at approximately the same levels. If the downward trend in total production continues, the output of either dried or fresh peaches or both will tend downward.

The available data on the acreage of freestones in California indicates that a further decline in production is in prospect during the next few years. Of the 67,400 acres of freestones in this state in 1929, 60,400 acres, or 90 per cent, were in bearing and only 6700 acres, or 10 per cent, were nonbearing. Furthermore, 71 per cent of the present bearing acreage is eleven years of age and older. Since the average commercial life of a peach tree is only 20 or 21 years, it is evident that a considerable decrease in bearing acreage due to old age may be expected. Nor is the number of young trees now planted sufficient to replace the loss that will normally occur in the old trees.

A considerable part of this prospective decline is likely to be in the principal drying peach varieties. The total acreage of Muirs and Lovells in 1929 amounted to 35,800 acres, of which 94 per cent were bearing and only 6 per cent nonbearing. Furthermore, 75 per cent of the bearing acres were eleven years of age and older.

During the past five years foreign markets have taken an increasingly larger proportion of our dried peaches. Approximately 22 per cent of the 1928 crop was exported, as compared with 19 per cent of the 1927 crop, 12.4 per cent of the 1926 crop, 10.3 per cent of the 1925 crop, and 9.5 per cent of the 1924 crop.

Production of fresh peaches in the United States is now at about the peak and present indications are that there will be a decline in the trend of production during the next few years. This decline, however, is not expected to be rapid; and whenever conditions are favorable to high yields heavy production and low prices are likely to prevail.

In the five state of Georgia, North Carolina, South Carolina, Tennessee and Arkansas commercial plantings in recent years have not been sufficient to maintain the present bearing average. The propor-

tion of young trees in these five states is now much less than four years ago. In 1929 only 25 per cent of the trees were less than six years of age as against 67 per cent in 1925. In Georgia about 30 per cent of the trees that were in commercial orchards in 1925 have been taken out or abandoned, and plantings have only been sufficient to replace one-third of them. More than 80 per cent of the decrease in the number of trees, however, has occurred in the southern district from which the earliest shipments are made.

PEARS

Unless disease takes heavy toll from the industry, the prospective increase in the production of pears is likely to be sufficient to cause a downward trend in prices during the next few years. The most uncertain element in the future of California production is the probable damage from black-end, a disease chiefly affecting pears grown on Jap root.

During the past decade there has been an extraordinary expansion in the bearing acreage and production of pears in this state. In 1919 there were 23,000 acres in bearing and in 1929, 69,500 acres—an increase of 46,500 acres. Production has almost kept pace with the increase in bearing acreage. The average production during the three years of 1919–1921 amounted to 101,000 tons as against an average of 204,000 tons in 1926–1928. In 1929, as a result of very unfavorable weather conditions, the crop was reduced to 186,000 tons.

According to the forecasts of the California Cooperative Crop Reporting Service the upward trend in bearing acreage may be expected to continue. It is estimated that by 1932 the bearing acreage will amount to about 82,200 acres, an increase of 12,700 acres, or 18 per cent, over the bearing acreage in 1929. If yields per acre during the next few years equal the average of the past ten years, the trend of production by 1932 will be about 35 per cent above the 204,000 tons average of the three years 1926–1928. Nor is it likely that the peak of production will be reached in 1932. Of the 94,000 acres of pears in the state in 1929, about 26 per cent was nonbearing. Furthermore, only 36 per cent of the bearing acreage was in full bearing while 64 per cent was in partial bearing.

About 87 per cent of the total pear acreage in California in 1929 was Bartletts and 13 per cent late varieties. Of the 81,500 acres of Bartletts 23 per cent was nonbearing and 77 per cent bearing. Only 37 per cent of the bearing acreage, however, was in full bearing.

The Bartlett pear has a three-way outlet: it may be shipped fresh, canned, or dried. During the past five years approximately 53 per cent of the California crop has been shipped fresh, 34 per cent canned, and 13 per cent dried.

Fortunately, during most of our shipping season, California fresh Bartlett pears meet with little competition from pears produced elsewhere. The great bulk of California Bartletts reach eastern markets by the first of September and are sold before supplies from Oregon, Washington, and the eastern states become heavy. The interstate shipments of fresh pears from California, which include a small proportion of late varieties, have risen from an average of 4860 cars in 1920–1922 to an average of 9200 cars in 1926–1928. This rapid increase in shipments, however, resulted in only a small downward trend in prices. If the demand for California Bartletts had not increased substantially, however, prices would have declined much faster. With interstate shipments of 9600 cars in 1928 California Bartletts averaged $2.95 a box in New York City. It is estimated that in 1921, when the demand was considerably less, 9600 cars would have sold for only about $2.60 a box. In 1929 the average price of California Bartletts at New York was $3.70 a box. The much higher price received in 1929 as compared with 1928 can largely be accounted for by the smaller interstate shipments of pears—about 28 per cent less than in 1928—and the smaller supply of competing fruits. There will probably be a further increase in the demand for fresh Bartlett pears, but unless the demand is increased faster than it has in the past, the prospective increase in interstate shipments will probably be sufficient to cause a further gradual downward trend in prices.

During the last three years an average of about 22,000 tons, or 11 per cent, of the California pear crop has been estimated as fall and winter varieties. In 1928 California late shipments amounted to about 1900 cars, or about 20 per cent of total pear shipments by rail out of the state. Unlike our Bartletts, most of these late varieties are shipped after the middle of September, competing with eastern pears and with the rapidly increasing production of late pears from Oregon and Washington. Annual pear shipments from the Pacific Coast after the middle of September—the best available indicator of the trend of winter pear production—are now three times the normal movement from the coast ten years ago. The percentage of trees still to come into bearing is larger than for Bartletts, indicating that production of winter pears is likely to increase even more rapidly than that of Bartletts during the next few years.

About 25 per cent of the entire Pacific Coast pear acreage consists of late varieties. They constitute between 45 and 50 per cent of the Northwest acreage, and about 13 per cent of the California acreage. Of the 12,000 acres of fall and winter varieties in the state, 72 per cent are less than 9 years old compared with 46 per cent in the case of Bartletts. Although the proportion of such young trees in the Northwest is considerably less than in California, there is sufficient young acreage to indicate further rapid increases in winter pear production in that section as well as in California.

Since 1921 rapidly increasing production of winter pears on the Pacific Coast has caused the prices of Bosc and Comice to decline much more raipdly than fresh Bartlett prices. As a result the premium in their favor has shrunk so much that growers' returns per box at the orchard are now only about the same as for Bartletts. Although the price premium in favor of Anjous has not decreased in recent years, the big prospective increases in its production and that of other late varieties on the coast indicate that the price of all winter pears will probably be lower during the next few years, unless better adjustment of production to demand is brought about and big strides made in increasing demand and otherwise improving distribution. Considering the peculiar difficulties of producing good yields of some varieties of late pears and the lower prices in view, caution suggests that new plantings should be made only in localities definitely known to be well adapted to producing large yields of excellent quality.

PLUMS

Judging from the available facts it does not appear that the trend of plum prices is likely to fall materially during the next few years, but neither is there likely to be any pronounced upward trend in prices. About all that can reasonably be expected is that the level of prices prevailing since 1921 will be maintained.

During the past decade there has been a rapid expansion in the bearing acreage and production of plums in California. Between 1919 and 1929 the bearing acreage doubled. According to the forecasts of the California Cooperative Crop Reporting Service the upward trend in bearing acreage will continue, but at a slower rate. By 1932 it is expected that there will be about 35,900 acres in bearing, an increase of 1700 acres over the bearing acreage in 1929. This prospective increase is smaller than that which has occurred. During the three years from 1926 to 1929 there was an increase of over 4000 acres while

during the previous three-year period, 1924–1926, there was an increase of over 6000 acres.

Based upon the forecast of bearing acreage, it appears that the trend of production in 1932 will be around 72,000 tons, assuming that yields during the coming years equal the average of recent years. The average annual production during the four years 1925–1928, amounted to 61,000 tons—11,000 tons, or 18 per cent, less than we may normally expect three years from now.

Although plums are produced in other sections of the United States, particularly in the Pacific Northwest, they do not compete seriously with California fresh plums, the bulk of which are shipped during the three months of May, June, and July. During this period there are practically no shipments from other states. By the time their shipments become heavy our plums are practically out of the markets.

Although the interstate shipments of fresh plums from California have fluctuated widely from year to year, there has been a gradual upward trend, rising from an average of 3065 cars in 1920–1922 to an average of 4500 cars in 1926–1928. This upward trend in shipments, however, did not result in a downward trend in prices. During the past nine years there has been no definite upward or downward trend in the prices of California plums in the eastern markets. This is evidence that the demand for our plums has increased. Consumers are buying a larger quantity now and are paying as much per pound for them on the average as before.

Prices at New York in 1929 averaged over 40 per cent higher than in 1928. The high prices were chiefly the result of the short plum crop. Interstate shipments from California amounted to only 2700 cars in 1929 as against 4670 cars in 1928. It cannot be expected, of course, that the high prices received in 1929 will prevail during the coming years. In view of the prospective increase in production it is likely that shipments of plums from the state will be even larger on the average during the next few years than they were in 1928.

A small quantity of California plums are canned each year, amounting on the average to around 5 per cent of the crop. There has been no apparent tendency during recent years for our canned pack to increase, although there has been a material increase in the canned pack of plums and prunes in the Pacific Northwest. With the steadily increasing supply of other canned fruits it does not appear that canning will offer an outlet for any substantial increase in the production of plums except at lower prices.

PRUNES

Growers should not expect the very high prices for prunes which prevailed in 1929 to continue during the coming years. These unusually high prices were largely the result of an abnormally small world crop of prunes, which is now estimated at only 154,000 tons as against 246,000 tons in 1928, 299,000 tons in 1927 and a three-year average, 1926–1928, of 265,000 tons. With weather conditions during the next few years as favorable to high yields as the average of recent years it is likely that the world commercial crop of prunes will average fully as large as in the three years of 1926–1928.

In the past decade there has been a pronounced upward trend in the world output of prunes. The average world commercial production (excluding Jugoslavian domestic consumption) in 1920–1922 amounted to 204,000 tons as against an average of 265,000 tons in 1926–1928, an increase of 30 per cent. As a result of the upward trend in the world output of prunes the trend of prices to California growers has been downward, falling from an average of about 9 cents a pound for 40–50's in 1921–1922 to an average of about 6 cents a pound for 40–50's in 1927–1928.

In California production increased from an average of 109,000 tons in 1920–1922 to an average of 198,000 tons in 1926–1928. The 1929 crop was reduced to 103,000 tons because of the very unfavorable weather conditions. Indications are that the level of production during the next few years, however, will be as large on the average as from 1926 to 1928. Although the yields per acre during the coming years will probably not average as high as in 1926–1928, because in the latter two years of that period they were considerably above normal, the larger acreage that is expected to be in bearing will, with normal yields, produce crops about the same size as the average of those three years. The bearing acreage in 1927 amounted to 165,160 acres. It is estimated that the bearing acreage in 1930 will amount to 179,900 acres, and in 1931 to 181,200 acres. For a few years thereafter, however, it is expected that the bearing acreage will remain about stationary.

The Pacific Northwest is the only prune-producing section of the world that had a large crop in 1929. The 1929 crop in that section is now estimated at 36,000 tons. This is about 10,000 tons larger than the average crop between 1922 and 1927. Although no immediate

increase in the number of trees is expected, future production is likely to average even larger than from 1922 to 1927, since a large proportion of the trees are now just in their prime.

The limited information that is available indicates that the French prune crop is not likely to be any larger during the coming years than it has been in recent years. Production in France has fluctuated widely from year to year but has averaged about 9000 tons during the last ten years. The 1929 crop, although larger than in 1928, amounted to less than 4000 tons.

During the past three years there has been a steady decline in the exports of prunes from Jugoslavia, falling from 52,000 tons in 1926 to 12,000 tons in 1929. According to Mr. M. J. Newhouse, who made a survey of the Jugoslavian prune industry in 1929, a number of factors contributed to this decline. Among the more important ones were a decrease in the number of trees, reduced yield per tree, the increased use of plums in jams and brandy, and the increased exports of fresh plums due to the unfavorable prices of dried prunes in recent years, and the improvement in methods of packing and railway transportation. Some of these factors, however, may be temporary rather than permanent in their influence. While there is some doubt as to whether the new plantings at the present time are keeping pace with the tree mortality, there is sufficient land in the low foothills, with good exposure and suitable soil, to maintain an important industry. Peasants are inclined to view the tree losses that have occurred as an opportunity for starting a young and vigorous orchard, since abundant new stock is available in the peasant's own hedgerows or in the nurseries at a very small cost. A scale that is now doing much damage is not difficult to control, and if new plantings are given sufficient space and not pruned too high they need not suffer the fate of the old orchards. The unfavorable climatic conditions, which have been partly responsible for the low yields, may not occur again for many years. On the other hand, it is probable that the shipments of fresh plums will continue to increase. Mr. Newhouse points out that while the exports of prunes from Jugoslavia during the next few years will be lower than in the years prior to and immediately following the war, when they averaged about 50,000 tons annually, they will neither continue to decline as they have done during the past three years nor remain at their present low level.

Exports of prunes from the United States in 1928–29 were the largest in the history of the industry. In that year a total of 134,740 tons, or 60 per cent of the crop, were exported. During the previous

three years an average of 92,000 tons, or 50 per cent of the average production, was exported. The principal foreign markets for our prunes in order of their importance are Germany, the United Kingdom, France, and Canada. During recent years these four countries have taken around 70 per cent of our total exports.

ORANGES

Navels.—The available facts point to an upward trend in the shipments of both oranges and grapefruit at the time California Navels are marketed. Although it is probable that the peak of production of Navels in this state has been reached, Florida and Texas are capable of producing materially larger crops of citrus fruits than they have yet produced, whenever conditions are favorable to high yields.

In 1928 the bearing acreage of oranges in Florida amounted to 155,000 acres, 50 per cent larger than in 1924. This upward trend is likely to continue during the next few years, since in 1928 approximately 40,000 acres were not yet in bearing. The production of oranges in Florida, during recent years, however, has not kept pace with the increase in bearing acreage. During three of the past four years conditions were particularly unfavorable to high yields. The small crop of 1925–26 was largely the result of neglect arising out of the real estate boom. The 1926–27 crop was injured by frost and hurricane, and the 1927–28 crop by frost and drought. In 1928–29, however, yields per acre were materially higher, and with the larger bearing acreage the crop was the largest ever produced in the state. Present indications are that the 1929–30 crop will be about 30 per cent smaller than last year.

Texas is also likely to become a more important factor in the production of oranges. The shipping season in Texas, as in Florida, practically coincides with that of our Navels. In 1928 there were approximately 18,900 acres of oranges in the Lower Rio Grande Valley of Texas, of which only 25 per cent were in bearing.

In addition, the large prospective increase in the shipments of grapefruit during the winter and spring months will probably add further to the competition of our Navels (see page 23).

Prices of California Navels in 1928–29 were the lowest since 1923–24 and only 73 per cent as high as the average prices from 1924–25 to 1927–28. These low prices may be directly attributed to the large crop in this country. The combined crop of winter oranges

in California and Florida amounted to approximately 29,400,000 boxes, as against an average of 19,500,000 boxes during the previous four years.

Fortunately, there has been a substantial increase in the demand for winter oranges during recent years. As a result, a given supply will now sell for about 45 per cent more than the same quantity would have brought in 1923–24.

Export markets are not likely to offer a large additional outlet for winter oranges. The principal foreign orange-producing countries, Spain, Italy, and Palestine, ship their fruit at the time our Navels are on the market. The tendency is toward increasing production in those countries.

Valencias.—The outlook for Valencia oranges continues favorable. The relatively low prices received in 1929 are not likely to prevail on the average during the next few years. The 1929 crop was the largest ever produced in the state and the average size of the fruit was the smallest in the history of the industry. Crops that will average as large as that of 1929 cannot normally be expected for several years, and by that time the demand for Valencia oranges will probably be materially greater than it is now.

Fortunately the prospective increase in the production of oranges and grapefruit in the other states of the union will probably not affect the prices of our Valencias except during April and May. Our Valencias are practically the only oranges in the markets of this country during most of their shipping season.

During recent years there has been a marked upward trend in both shipments and prices of Valencias. People are not only eating more oranges during the summer months but they are also paying more for them as well. In 1921 the trend of shipments stood at 7,000,000 boxes, in 1929 at 12,000,000 boxes. The actual shipments in 1929 were about 30 per cent above the estimated trend. Indications are that the upward trend in shipments will continue. In 1929 there were 112,250 acres of Valencias in the state, of which 20,890 acres, or 19 per cent, were not yet in bearing and an even larger proportion was not in full bearing. As the trees come into full bearing production will be materially increased.

During the past decade the demand has increased even faster than shipments. The demand is likely to continue to increase. While there are some indications that the rate of increase in the demand during the coming years may not be as rapid as in the past, there is no evidence that the upward trend has been stopped.

In addition to a prospective increase in consumption in this country, export markets offer a promising outlet for our Valencias. Great Britain, for example, is a large consumer of oranges. The great bulk of the oranges in that country, however, have been consumed during the winter and spring months. During the past three years Great Britain has imported an average of 12,750,000 boxes of oranges, 77 per cent of which were received during the six months of December to June. It seems reasonable, therefore, to believe that the consumption of oranges in Europe during our Valencia season could be greatly increased. To do so, however, would probably require considerable expense. But in view of the prospective increase in our production, the costly work of developing new markets abroad would probably be repaid many times.

Although most of the European supplies of oranges are received during the winter and spring months, it should not be assumed that California Valencias will entirely escape competition from other oranges in those markets. The shipping season in the Union of South Africa, which is rapidly becoming an important orange-producing country, practically coincides with that of our Valencias. In 1927 there were over three million orange trees in the Union of South Africa, of which only one-fourth were in commercial bearing. Most of the exports from the Union of South Africa go to Great Britain. South American countries, particularly Brazil and Argentina, may also become more important sources of supplies of summer oranges in European markets.

GRAPEFRUIT

A marked increase in the shipments of grapefruit in the winter and spring months is in prospect during the next few years. On the other hand, it is not likely that the shipments of summer grapefruit will rise above the present level.

The bulk of the grapefruit from Florida, Texas, Arizona, Imperial Valley and central California is shipped during the eight months of October to May.

Most of the increase in the bearing acreage of grapefruit in California during recent years has occurred in the Imperial Valley. In 1925 there were only 500 acres in bearing in Imperial County; in 1929 there were 4680 acres. During the next few years there is likely to be a further substantial increase, since about 3600 acres have not yet come into bearing.

The bearing acreage in Arizona increased from 560 acres in 1924 to 1600 acres in 1928. The non-bearing acreage in 1928 amounted to 2200 acres. It appears, therefore, that the bearing acreage in that state may be more than doubled within the next few years. Furthermore, large additional plantings are in prospect.

During the next few years the increase in bearing acreage in Texas is likely to be even larger than in Arizona or the Imperial Valley. In 1929 there were 53,200 acres of grapefruit in Texas, of which only 7000 acres were five years of age and older. Carlot shipments of grapefruit from Texas increased from only 48 cars in 1922–1923 to 1547 cars in 1928–1929. In view of the probable increase in bearing acreage it is likely that the upward trend in shipments will continue during the next few years.

As contrasted with the large expansion that is in prospect in the Imperial Valley, Arizona, and Texas, only a small increase in bearing acreage is expected in Florida. Of the total acreage of grapefruit in that state in 1928, 93 per cent was in bearing. A considerable proportion of the present bearing acreage, however, has not reached the age of full bearing. In 1925 the bearing acreage was only 55 per cent as large as in 1928.

The 1928–29 crop was the first large grapefruit crop that Florida has produced since 1924–25. Carlot shipments for Florida last year amounted to 21,830 cars as against an average of 15,220 cars during the previous three years. In 1924–25 shipments amounted to 20,090 cars. The same conditions which caused the low yields of oranges in Florida (see page 21) were also responsible for the low yields of grapefruit.

Chiefly as the result of the short crops of both grapefruit and oranges in Florida, prices of winter grapefruit during the three years of 1925–26 to 1927–28 were relatively high, averaging about 50 per cent above that of the previous three years.

In 1928–29 prices of winter grapefruit were about 30 per cent below the average of the previous three years. They were higher, however, than in either 1923–24 or 1924–25, although total carlot shipments of winter grapefruit were about 18 per cent larger than in those two years. This is evidence that there has been a substantial increase in the demand for winter grapefruit. A further increase in demand can reasonably be expected both in this country and in Great Britain. Unless the future increase in demand is even greater than that which has occurred, however, the very favorable price level which prevailed between 1925–26 and 1927–28 is not likely to be maintained.

There have been practically no plantings of grapefruit in sections which ship during the summer months. Consequently, the supplies of fresh summer grapefruit are not likely to increase. If a very large expansion in the canning of grapefruit occurs, however, it will tend to extend the marketing of winter grapefruit into the summer months. During the past season 957,000 cases of grapefruit were canned in Florida as against 455,100 cases in 1927.

LEMONS

The lemon industry is gradually obtaining a more favorable basis than that which prevailed on the average during recent years.

The available information indicates that lemon production in this state is now at about the peak. While there may be a further increase in the average yield per acre due to the increased age of the trees, it is not likely to be large, and it will probably be largely offset by a decrease in bearing acreage. Since 1925 the trend of bearing acreage has been downward, falling from 44,270 acres in 1925 to 43,340 acres in 1929. This downward trend is likely to continue during the next few years at least, since the present non-bearing acreage amounts to less than 2950 acres, which is not sufficient for normal replacements. It should not be expected, however, that this downward trend will be rapid. Decreases in the acreage of tree fruits take place slowly.

Although the quality of the 1928–29 crop of lemons was relatively poor, other conditions were particularly favorable, and as a result the largest shipments on record were sold at relatively high average prices for the season. In the eastern markets unusually high temperatures prevailed at times during the summer months and fortunately the heat waves came when there were large quantities of fruit available there. Imports of lemons were very small amounting to less than 500,000 boxes as against an average of 1,000,000 boxes during the previous five years. The Italian winter crop was short but the summer crop was as large as in 1928. Exports of lemons from Italy to the United States during the period May to August, however, amounted to only 244,000 boxes in 1929 as against 505,000 boxes in 1928. The European demand for summer lemons was strong and Italian exporters were evidently hesitant about consigning a heavy volume to this country in view of the large California crop.

With imports of lemons around 1,000,000 boxes—the average of the five years, 1924–1928—our present production is frequently in excess of demand. In recent years when our crop has been average or

above we have produced more lemons than could be sold at prices which would return a satisfactory profit to growers. Consequently, it has been necessary in years of large production to ship only a part of the crop and send the remainder to by-product plants on a salvage basis. During the winter and spring months of 1929 the volume of California lemons available for shipment was much larger than the market would take. Consequently, the storage capacity of most of the packing houses was taxed to the limit and it was necessary to send a relatively large volume of lemons to the by-product plants.

There has been some increase in the demand for lemons in this country, which has been manifested by an increase in the per-capita consumption of lemons. From 1908 to 1917 the per-capita consumption averaged around 13.4 lemons annually; during recent years it has averaged around 16 lemons annually, an increase of 19 per cent. Past experience indicates that it is very difficult to increase the demand for lemons. In view of the difficulties involved, however, real progress has been made, and much of this progress can be attributed to the activities of the California Fruit Growers Exchange. With continued effort some further increase in demand can probably be effected, although such progress will be slow, judging from the experience of the past twenty years.

ALMONDS

The available facts indicate that the outlook for almonds is reasonably favorable. While any widespread plantings do not appear to be justified, a conservative expansion in the areas best adapted to this crop may be desirable.

The bearing acreage of almonds in California, which is the only state in the union in which this crop is grown commercially, is now at about the peak. The new acreage coming into bearing during the next few years will probably be no larger than is necessory to replace the acreage that will normally go out of bearing. Consequently, it is expected that the bearing acreage will remain practically stationary. This expected stationary situation is a distinct contrast to the rapid increase in bearing acreage during the past decade. In 1921 the bearing acreage amounted to 41,200 acres, in 1929 to 91,700 acres, an increase of 123 per cent.

Production of almonds in California has also increased rapidly, rising from an average of 7250 tons in 1921–1922 to an average of 12,800 tons in 1927–1928. As a result of the severe freeze the 1929 crop was the smallest since 1917, amounting to only 4600 tons.

Despite the pronounced upward trend in the production of almonds in California, the nation now produces only about one-third of the almonds consumed in this country. The remainder is imported mainly from Italy, Spain, and France.

From 1921 to 1926 there was a pronounced downward trend in imports. During five consecutive years imports were smaller than in the preceding year. The total decrease between 1921–1922 and 1926–1927 amounted to 13,800 tons, in equivalent of unshelled almonds, or 35 per cent. During that same period the increase in the production of almonds in this state amounted to only 6750 tons. Consequently, there was a substantial decrease in the total supply of almonds available for consumption in this country. The per-capita supply in equivalent of unshelled almonds amounted to 0.85 pounds in 1921–1922 as against only 0.67 pounds in 1926–1927, a decrease of 21 per cent.

Chiefly as a result of the decline in the per-capita supply of almonds in the United States there has been an upward trend in prices paid to growers, rising from 15.0 cents a pound in 1921 to 17.5 cents a pound in 1928. Prices in 1929 were, of course, high because of the very short crop in this state.

During the next few years it is not likely that there will be a further pronounced decline in the per-capita supply of almonds in this country, nor is there likely to be a further material upward trend in prices. The continuous decline in imports from 1921 to 1926 has already been checked. During the fiscal year of 1927–28 imports were 15 per cent larger than in 1926–27, while in 1928–29 they were 18 per cent larger. The earlier decline in imports was largely the result of an increase in the tariff, recovery of European markets, and an increased use of California shelled almonds in the United States. It is probable that the most pronounced effect of the first two of these factors has occurred already. The rise in almond prices in this country has made it easier for importers to pay the additional tariff duty. European markets have made a considerable recovery and it is not likely that they will increase their purchases of almonds as much during the next few years as they did between 1921 and 1926.

The world production of almonds is likely to average as high during the next few years as in recent years. Production in this state is expected to remain at about the present level and there is no available evidence that there will be any pronounced downward trend in production in the principal foreign almond-producing countries. Most of these foreign countries produce a much larger volume of almonds

than they consume; consequently, the surplus must be sold in other countries. The United States has been an important market for a portion of that surplus for many years.

Another factor that growers should consider when deciding whether to plant almonds is the prospective increase in competition from walnuts and pecans. The production of both walnuts and pecans is likely to be materially larger during the next few years than they have been in recent years. It appears, therefore, that almonds may be subjected to keener competition from these nuts in the consuming markets during the coming years than they have experienced in the past.

WALNUTS

The outlook for additional plantings of walnuts is unfavorable. The production already in prospect will probably be more than sufficient to supply the domestic requirements for unshelled walnuts at the present level of prices, unless there is an extraordinary increase in the demand for them. If such an increase in demand does not occur, the future trend of prices to growers may be expected to be downward.

The total acreage of walnuts in California, which produces about 97 per cent of the commercial crop of the nation, amounts to approximately 127,480 acres. Of that amount 87,560 acres, or 69 per cent, are classified as bearing and 39,920 acres, or 31 per cent, as nonbearing. According to the forecasts of the California Cooperative Crop Reporting Service there will be 107,500 acres in bearing by 1932, about 23 per cent greater than the present bearing acreage and about 50 per cent greater than the bearing acreage in 1926.

The production of walnuts in this state amounted to an average of 39,000 tons during the past three years, 1927–1929, as against an average of 22,500 tons during the three years of 1920–1922, an increase of 16,500 tons, or 69 per cent. A part of this increase has been offset by a decline in imports of unshelled walnuts which compete most severely with our product. The average imports of unshelled walnuts during the three years of 1920–21 to 1922–23 amounted to 12,800 tons as against an average of 6190 tons during the two years of 1927–28 and 1928–29. On the other hand, imports of shelled walnuts have been about as large during the past two years as they were in 1921–22. They have, however, been considerably smaller than they were during the three years from 1924–25 to 1926–27. During those three years imports of both shelled and unshelled walnuts were relatively large.

As a result of the prospective increase in domestic production and the probability of lower prices in this country, imports of both shelled and unshelled walnuts may average lower during the next few years than in 1927–28 and 1928–29. The potential competition from foreign countries, however, may be even greater during the coming years than it has been in recent years. Most of the United States imports of walnuts come from France, Italy, and China. According to the available information, some increase in walnut production is in prospect in both France and Italy.

Since the imports of unshelled walnuts are now relatively small, averaging only 6190 tons during the past two years, it is evident that only a further small increase in the production in this state is required to supply our domestic requirements at the present level of prices. In order to dispose of the large increase in production that is in prospect it will probably be necessary to reduce the prices on the unshelled nuts and to shell a larger proportion of the corp.

The large prospective increase in the production of improved pecans, most of which are marketed in the shell, may add considerably to the competition that California walnuts meet in the consuming markets. A recent survey indicates that of an estimated total of 8,000,000 trees of improved varieties, 65 per cent were planted during the past 10 years and 40 per cent during the past five years.

BEEF CATTLE

The high phase of the beef-cattle price cycle which has prevailed since the latter part of 1927 is expected to continue during 1930. However, average prices for all grades for the entire year may be somewhat lower than those of 1929.

The number of all cattle on farms apparently reached the low point of the production cycle in 1928 and since then the tendency of cattle numbers has been slightly upward. The estimated number of cattle on farms January 1, 1930, was 57,967,000. This was 1,500,000 head, or 2.7 per cent, more than on January 1, 1929, and 2,291,000 more than in 1928. Most of the increase was in cattle kept for milk, including cows, heifers, and calves. Increases in cattle kept chiefly for beef were relatively small.

Total inspected slaughter of cattle during 1929 was 8,324,000 head, or 2 per cent smaller than in 1928, and slaughter of calves 4,489,000 head, or about 4 per cent smaller. Compared with the record slaughter

in 1926 slaughter of cattle and calves in 1929 showed a decrease of 2,513,000 head, or about 16 per cent. The 1929 decrease in slaughter was in cows, heifers, and calves; steer slaughter was larger than in 1928. Apparently the movement to increase cattle numbers is following the line of increasing breeding stock and holding back calves.

The gradual increase in demand for beef which has been under way since 1921 continued during a greater part of 1929. This was evidenced by the fact that for the year per-capita consumption decreased only 1.3 per cent, whereas retail prices increased 7 per cent over 1928. This is a greater increase in price than would ordinarily accompany such a slight decrease in supplies. During the last two months of 1929 demand fell off somewhat. This recession in demand is likely to continue during the first half of the year at least. Improvement in demand during the remainder of the year will be largely governed by the extent to which industrial activity increases and by the prices of other meats.

The upward trend in cattle numbers promises to proceed at only a moderate rate during the next year or two and may not be reflected in materially increased slaughter until the latter part of 1931. It seems altogether likely, however, that the present relatively high level of cattle prices may within a period of several years bring about undue expansion and subsequent lower prices. It is not to be expected, however, that in either phase of this cycle movements will be as extreme as in the last one when the situation was aggravated by the World War and a major industrial boom and depression.

An unfavorable factor in the beef situation is the possibility that a relatively large number of dairy cows may be sold for slaughter within the next two years. Prices of dairy cows have already reached the peak and are declining. As this decline continues the margin between the prices of dairy and beef cattle will be lessened, which will tend to encourage the sale of dairy cows for slaughter. Furthermore, the lower prices of dairy products will tend to discourage the practice of keeping dairy cows to an older age.

If cattle growers continue their present policy of expansion through increasing the numbers of breeding stock and selling at younger ages, they will be in a position to make fairly quick adjustments in production by close culling of old cows whenever the price situation makes reduction desirable.

DAIRY

While the underlying situation is not as bad as would appear from the current butter prices, California dairymen face a period of keener competition than that which has been experienced in recent years.

With production in 1929 exceeding that of 1928 and demand reduced toward the close of the year, a large surplus of butter accumulated, and price fell to the lowest point in several years. On September 1, 1929, storage stocks were the largest on record, amounting to 169,000,000 pounds. At the close of the year stocks had been reduced to 82,000,000 pounds, but were still 38,000,000 pounds heavier than a year earlier. Stocks of cheese and concentrated milk were also unusually heavy during 1929.

The precipitous decline in wholesale butter prices in eastern markets since October has only recently been followed by corresponding reductions in retail prices. With reduced retail prices consumption will tend to increase and thus enable the surplus stock to move into consumption, which should relieve the present demoralized situation in the wholesale markets. While material improvement in the buying power of consumers is not expected before the second half of 1930 the butter and cheese markets have probably felt the worst of the depression. Demand for fluid milk and market cream will probably show some decline in the first half of 1930 as compared to the first half of 1929. Thereafter the demand for all dairy products may continue the upward trend which has until recently prevailed.

High prices for dairy products in recent years encouraged dairymen principally in the eastern states, to raise more heifers than were needed for replacement and to provide for the normal increase in demand. In addition they have retained more than the usual number of old cows in the herds. As a result the total number of dairy cows on farms January 1, 1930, was nearly 3 per cent greater than a year earlier, while the number of heifers was nearly 6 per cent greater. Most of the increase in numbers of cows occurred in the eastern states. In California there was no increase in numbers, while in the western states as a whole the increase was less than 1 per cent. There was, however, an increase of 10 per cent in the number of heifers in this state. Most of this increase is needed to maintain the present number of dairy cows, since in the market-milk areas relatively heavy replacements are necessary.

The tendency to keep more cows throughout the United States does not yet appear to have been checked. December stockyard receipts of cattle from dairy states still showed abnormally small numbers. Unless dairy herds are closely culled and more of the less desirable heifers sent to slaughter there will be a further increase in the number of milk cows during 1930 and 1931.

Prices of dairy cows have already reached the peak and have started downward. With relatively lower prices of all dairy products than those which have prevailed in recent years, it may be expected that the downward trend in prices of dairy cattle will continue. This is a particularly favorable time for dairymen to dispose of cull cows.

HOGS

Hog prices in 1930 are expected to average at least as high as in 1929 and possibly higher. A reduction in slaughter supplies is indicated, but this probably will be partially offset by a decrease in foreign and domestic demand for hog products.

The estimated number of hogs on farms on January 1, 1930, was 52,600,000 head, or 7.5 per cent less than the revised estimate of 56,880,000 head on January 1, 1929. The decrease in the Corn Belt states amounted to 2,521,000 head, or 6 per cent.

The supply of hogs going to commercial slaughter for the marketing year ending with September, 1930, is expected to be somewhat smaller than that for the previous marketing year. The pig surveys of the department showed a decrease of about 6 per cent in the 1929 spring pig crop of the Corn Belt and an increase of about 4 per cent in the 1929 fall pig crop, or a total crop for the year about 3 per cent smaller than that of 1928.

Domestic demand for pork products was materially stronger in 1929 than in 1928. A 4 per cent increase in wholesale prices was accompanied by a reduction of only 1 per cent in per-capita consumption. This is a smaller decrease in consumption than would ordinarily accompany such a large increase in price. Domestic demand for lard declined, however, per-capita consumption being less in spite of lower prices.

Outstanding points in the European pork situation are: (1) a tendency toward generally increased hog numbers, as indicated by some increases in breeding sows and young pigs, and some upward movement in current marketings; (2) a feed supply considerably larger than that of last year, with breeding being encouraged by low

feed prices; (3) a downward tendency in prices of hogs, cured pork, and lard, and (4) no indication of any significant increase in buying power in the leading markets for American pork products during 1930.

POULTRY

The level of egg prices in 1930 is likely to be lower than in 1929. The estimated number of chickens on farms is about 5 per cent above that of a year ago. This, together with the higher proportion of pullets and young hens in the laying flocks, indicates a volume of egg production in 1930 greater than in 1929. The number of pullets raised in 1929 was about 10 per cent larger than in the previous year.

Receipts of eggs at the four principal markets during 1929 amounted to 14,940,000 cases, 3 per cent less than in 1928. In every month of the year except December receipts were smaller than for the corresponding month of the previous year, but in December they were slightly larger.

The annual average price of eggs at San Francisco in 1929 was the highest since 1925 and about 10 per cent higher than in 1928. The high prices in 1925 greatly stimulated the expansion of egg production, and as a result of that expansion prices declined steadily from 1925 to 1927. The unprofitable prices in 1927 resulted in a substantial reduction in the number of birds in laying flocks in 1928. With a reduction of about 10 per cent in the number of pullets raised in 1928 as compared with 1927 the number of birds in laying flocks in 1929 was even smaller than in 1928. The decline in egg production since 1927 has been accompanied by advancing prices. The industry is now in a position similar to that of 1925.

SHEEP

California sheepmen are not likely to have as favorable conditions on the average for marketing lambs in 1930 as those which prevailed in 1929. Indications are that the competition from fed lambs will be more severe and that the demand in the consuming market will be below that of 1929.

On January 1, 1930, there were over 5,000,000 head of lambs on feed for market, the largest number in eight years and about 700,000 head larger than on January 1, 1929. The increase in lambs on feed this year was largely in Colorado and western Nebraska. Because of unfavorable weather conditions in these states during October and November the lambs made only small gains and the movement of them to market may be delayed somewhat longer than usual.

The upward trend in consumer demand for lamb that has been under way during the past few years is not expected to continue during 1930. Indications are that the 1930 level will be below that of 1929, especially during the first part of the year. A slackening in the demand for lamb began to develop during the latter half of 1929 and was particularly noticeable near the end of the year.

In recent years large numbers of ewe lambs have been kept each year in order to expand flocks, and this has retarded the increase in supplies sent to market. The tendency to build up flocks has been greatly checked, however, and it may be expected that the normal yearly increase will now go to increase the supplies of sheep and lamb for slaughter. Reduction in the breeding flocks or the failure to keep back sufficient ewe lambs to maintain the present breeding flocks will, of course, add further to the already large prospective supplies for slaughter.

Although prices of lamb and wool are expected to be lower than the average of recent years, the situation does not appear to be such as to require any drastic liquidation on the part of experienced sheepmen who are in a favorable position with respect to range and pasture. In the past, periods of low prices such as those now prevailing for wool, and as seems probable for lamb, have been followed by higher prices a few years later. No such sharp price declines as took place in 1920 and 1921 are expected unless, of course, unusually large numbers are forced on the market within a relatively short time.

Wool prices experienced a material decline during 1929. Although prospective world supply and demand conditions do not indicate an immediate improvement in the wool situation, the expected revival of business conditions after the middle of 1930 gives encouragement for anticipating an increased demand for wool in 1931.

The 1930 world wool clip will probably not be much different from the large clips of 1928 and 1929. Production has been increasing rapidly in recent years, the total in the important countries exclusive of Russia and China rising from 2,566,000,000 pounds in 1923, to 3,213,000,000 pounds in 1928. Most of this increase came in countries of the southern hemisphere and in the United States. In view of present low wool prices, material further expansion is not to be expected and some decrease is likely by 1931. It should also be noted that several of the large wool-producing countries of the southern hemisphere are subject to more severe droughts than have occurred in recent years. A recurrence of one of these periods could reduce their sheep numbers materially in a short time.

ASPARAGUS

Canning Asparagus.—The outlook for canning asparagus is favorable provided growers do not plant too large an acreage. Plantings in the next two years no larger than in 1929 will apparently take care of the necessary replacements and in addition provide for a further substantial increase in demand.

Practically all of the canning asparagus and about 45 per cent of the table asparagus produced in the United States are grown in California. Of the total bearing acreage of 55,640 acres in this state in 1929 approximately 93 per cent was in the Delta District. This district contributes all of the canning asparagus and about 90 per cent of the carlot shipments of table asparagus from California. The other areas in the state producing table asparagus are in Imperial, Fresno, Los Angeles, Riverside, and Orange counties.

During the past eight years there has been a pronounced upward trend in production in the Delta, rising from 1,300,000 cannery boxes in 1921 to 3,870,000 boxes in 1929. The actual production last year was about 6 per cent below the estimated trend because of the reduced yield due to unusually cool weather during the cutting season. The marked upward trend in production is not expected to continue during the immediate future. With normal yields production during the next two years will probably average only about 5 per cent above the average of the past two years. About 75 per cent of the asparagus produced in the Delta is utilized for canning and about 25 per cent for fresh consumption.

The canned pack of asparagus, which remained practically stationary at around 867,000 cases from 1916 to 1921, has increased rapidly during the past eight years. In 1929 it amounted to 2,673,000 cases, an increase of 176 per cent over the 1916–1921 average. Despite this enormous increase the canners' opening prices were 14 per cent higher in 1929 than in 1921.

The situation during that period, however, was not without its difficulties. The pack of 1924, which was 18 per cent larger than in any previous year, did not move readily into consumption at the high prices asked at the beginning of the season, and the carryover into the 1925 season amounted to about 170,000 cases. As a result the opening price, which was $3.85 a dozen cans in 1924, was reduced to $3.10 a dozen in 1925. In 1926, with a pack 28 per cent larger than in 1925, a further reduction of 10 cents a dozen was made. The lower

prices together with the extensive advertising campaign which was started in that year, greatly stimulated consumption. About 25 per cent more canned asparagus was sold in 1926 than in 1925. And in 1927 and 1928, despite small advances in opening prices, sales continued to increase, although at a somewhat slower rate.

A further increase in the demand for canned asparagus can reasonably be expected. In order to supply that increase at the present level of prices, a larger bearing acreage than we now have will be necessary. The chief danger in the situation is that growers may plant a much larger acreage than is warranted, just as they did in 1923 and 1924.

Table Asparagus.—Only in particularly favorable localities are additional plantings of asparagus for fresh consumption alone likely to be justified. As contrasted with canning asparagus, California table asparagus meets with considerable competition from that grown in other states, particularly in Georgia and South Carolina. Indications are that the production in those states will average materially higher during the next few years. The acreage in South Carolina was 32 per cent larger in 1928 than in 1926, while in Georgia it was 29 per cent larger. These increases, however, have not yet resulted in corresponding increases in production, since asparagus does not come into full bearing for several years after it is planted. On the other hand, it is not expected that the upward trend in shipments from this state will continue during the next two or three years; neither is there likely to be any downward trend.

Until about the middle of April the larger proportion of California shipments of table asparagus go to eastern markets, but thereafter most of them go to markets within the state. This is largely the result of the increase in the supplies in the eastern markets from other states. During the latter part of March and in April receipts from South Carolina and Georgia arrive in the eastern markets, while in April, May, and June receipts from the late-shipping states arrive there. It is only during February and the first part of March that California asparagus escapes competition in the eastern markets from that grown elsewhere.

During the three years 1921–1923 the annual average prices of table asparagus were high, averaging $5.90 a crate at New York and $3.75 a crate at San Francisco. During the past three years, however, prices have been much lower, averaging only $4.35 a crate at New York and only $2.70 a crate at San Francisco. That decline was largely the result of the great increase in carlot shipments, not only

from this state, but also from South Carolina and Georgia. The combined shipments from these three states have increased from an average of 517 cars a year in 1921–1923 to an average of 1974 cars a year in 1927–1928.

BEANS

The acreage planted to beans in 1929, both in the United States as a whole and in California, will apparently produce under average growing conditions about all of the beans that can be sold at satisfactory prices. Yields per acre in the United States in 1929 were about 6 per cent below the average of the past four years. In California and Michigan yields were particularly low, but in Colorado and Idaho they were much above average.

The average United States production of all beans during the five years 1924–1928 was 10,396,000 bags. Supplemented by net imports, the average annual supply for domestic consumption during this five-year period was about 10,800,0000 bags. Consumption of beans has increased at the rate of about 300,000 bags annually. During the period July 1, 1928, to July 30, 1929, a total of about 11,130,000 bags moved into consumptive channels. Imports during this period were below average, owing to the small crop of 1928 in other countries. In 1929, however, the bean crop was large in Rumania, Japan, and other important producing countries. Unusually heavy imports of 567,000 bags during the first four months—September to December—of the 1929–30 marketing season, were encouraged by the high United States price level of beans at that time, by depleted stocks, and low production of Small White beans in this country. These imports have had a depressing influence on prices, especially those of Small White beans and other white beans.

The harvested acreage in Michigan and New York composed largely of Small White beans, was 28 per cent greater in 1929 than in 1928. Because of low average yields, however, the production of Small White beans was only 3,300,000 bags, which is 480,000 bags below the average for the preceding five years. An average yield on an acreage equal to that harvested in 1929 would result in a total production of over 4,200,000 bags, which appears to be somewhat larger than can be sold at satisfactory prices.

The combined acreage of Limas and Baby Limas in California amounted to 130,000 acres in 1929, as compared with 113,000 acres for 1928. The yield, however, was only 10.1 bags per acre, which is 15 per cent below the average 1925–1928 yield of 11.9 bags. The total

production, therefore, was only 25,000 bags above that of 1928. Unless yields per acre are again unusually low in 1930 or total Lima-bean acreage is reduced, it is likely that prices will be lower. With an acreage equal to last year and with average yields, the crop may be expected to reach 1,550,000 bags, which is about 15 per cent below the record crop of 1926.

The total production of Pink beans produced in 1929 is reported to be 58,000 bags less than the 1928 crop of 588,000 bags. Prices, however, were slightly lower, because of the unusual large crop of Pintos, a variety which competes with Pinks. The Pinto crop was 736,000 bags larger in 1929 than in 1928, the prices were $1.10 per hundred pounds lower. The carryover of Pintos into the 1930 season will probably be large. On the other hand, there is little probability that the yield per acre in Colorado will be as high in 1930 as it was in 1929.

The production of California Blackeyes in 1929 is reported to be 490,000 bags as against 428,000 bags in 1928. Prices have averaged lower than last year, but are still considerably above the average of recent years.

Prices of Bayos in 1929 were the highest since 1925 and about 15 per cent higher than in 1928. Production of Bayos in 1929 amounted to only 12,000 bags, the smallest crop on record.

COTTON

Cotton prices are likely to be lower in 1930 than in 1929 unless the acreage in the United States is materially reduced or the yields per acre are below average.

The acreage and production of cotton in the United States has increased each year since 1927. The acreage harvested in 1929 amounted to 46 million acres, being exceeded only by that harvested in 1925 and 1926. Yields per acre in 1929, however, were much below the 1926 yields and somewhat below the 10-year average yields. Drought in Texas and Oklahoma and weevils and storms in North Carolina resulted in unusually low yields in those three states, which in 1929 contained over one-half of the total cotton acreage.

Despite increasing production of cotton in this country during the past three years, world consumption of American cotton has exceeded production. Consequently, the excessive carryover of 7.8 million bales of American cotton at the end of the 1926 marketing season has been gradually reduced. The carryover into the 1929 season amounted to only 4.9 million bales.

The estimated production of cotton in the United States in 1929—14.9 million bales—is only 1.5 per cent below the world consumption of 15.1 million bales of American cotton during the 1928–29 season. Thus far in the 1929–30 season, world consumption of American cotton has been below that of the corresponding period of last year. Until the first of November all of this decrease occurred in European countries, which is to be attributed primarily to less favorable business conditions in those countries in 1929 than in 1928. Exports of American cotton during the last five months of 1929 were about 600,000 bales less than in the corresponding five months of the previous season. On the other hand, the very good domestic demand conditions which existed in 1928–29 continued into the first part of the present season, and up to the first of November domestic consumption was larger than in 1928. In November and December, 1929, however, domestic mill consumption declined considerably and sales of cotton cloth were about 12 per cent less than for the some two months of 1928.

LETTUCE

With the constant tendency toward expansion of lettuce acreage, particularly in California and Arizona, the industry is faced with a real problem in the orderly distribution of the crop, in the prevention of serious overlapping of shipping periods in competing districts, and in the production of high-quality lettuce.

A moderately increased total commercial production of lettuce in the United States in 1929 over that in 1928 was marketed at higher average prices. The pronounced increase in the demand for lettuce, which has characterized the past several years, continued in 1929, and there is as yet no evidence that the peak of demand has been reached.

Growers should not, however, assume that markets can be expanded sufficiently to absorbe a very large immediate increase in production at the present level of prices. Production in New York in 1929 was 73 per cent larger than in 1928 and as a result prices dropped 58 per cent. Similar conditions were experienced in the Imperial Valley of California in 1926–27 and in the California spring lettuce area in 1928.

The influence of quality upon the price of lettuce also deserves emphasis. The general experience has been that poor-quality lettuce will ruin a market faster than anything else. Although it takes a little time for this factor to be felt, it is very consistant and exerts a strong influence. It usually pays, therefore, to grow lettuce in given sections only at those times when lettuce of good quality can be produced.

The commercial acreage of lettuce in the United States has increased each year since 1918 with but one exception. Carlot shipments of lettuce have shown an increase each year since 1918. During this period the area in commercial plantings has grown from 16,090 acres to 141,430 acres; and shipments have increased from 13,788 cars to 53,260 cars. Practically all of these increases have been in the states producing Iceberg-type lettuce, principally California, Arizona, and Colorado.

POTATOES

Preliminary reports on acreage which growers intend to plant in 1930 incidate a total potato area of 3,570,000 acres. This is nearly 6 per cent larger than the area harvested in 1929. If the intended acreage for 1930 is planted and a yield in line with the trend in recent years is secured, the total production in the United States would be around 421,000,000 bushels, which would be about the quantity produced in 1924, when prices fell to disastrously low levels.

Reports received from potato growers seem to indicate that in nearly all states a larger acreage will be planted in 1930 than in 1929. In practically all of the late-potato states except Maine and Idaho, a majority of the commercial growers who reported harvesting large acreages of potatoes in 1929 intend to plant reduced acreages this season, the most extensive commercial growers planning the sharpest reductions. On the other hand, a large proportion of the growers in these states who reported they had harvested 10 acres or less are planning increases, the largest percentages of increase being planned by growers with less than 5 acres. In all of the early-potato sections north to Virginia, Missouri, and Kansas substantial increases are being planned by all classes of growers. It is impossible at this time to determine accurately the total acreage which growers intend to plant but considering the large proportion of the potato crop grown in fields of less than 10 acres the average increase planned in the United States as a whole is believed to be about 6 per cent larger than that planted last year. This would indicate about 3,570,000 acres for harvest next fall. This acreage would include about 2,296,000 acres in the so-called surplus late-potato states, an increase of nearly 5 per cent over the acreage harvested last year; 848,000 acres in the sixteen states growing late potatoes in quantities insufficient for their local needs, an increase of nearly 4 per cent over the acreage harvested last year; and 426,000 acres of early and late potatoes in the thirteen southern states, an increase of nearly 18 per cent over the acreage harvested last year.

November reports from commercial potato growers in twelve important early and second-early states indicated that an increase of about 12 per cent in the commercial early-potato area was intended. Recent reports show further increases over these intentions. At the present time the reduced buying power of consumers from the high level of 1929 appears to have prevented the seasonal price advance which was expected.

A favorable factor in the early-potato situation, however, is that the stock of old potatoes on hand at the beginning of the marketing season for early potatoes will probably be unusually light. Stocks of merchantable potatoes on hand January 1, 1930, in the thirty-five late states were probably about three-fifths of the quantity on hand January 1, 1929, and were probably the lowest since January 1, 1926. As the relatively light holdings on January 1, 1930, will probably find outlets at good prices, early potatoes will meet correspondingly less competition.

RICE

An acreage of rice in California in 1930 equal to that in 1929 would with average yields produce a crop that would about fulfill the requirements of the domestic markets and Hawaii. Production in excess of this amount must be sold in foreign markets, particularly Japan.

Yields per acre in California in 1929 were unusually high, but with a decrease in acreage of 28 per cent below that of 1928, production amounted to only 6,175,000 bushels as against 8,171,000 bushels the previous year. Stocks on hand at the beginning of the crop year in 1929 were less than on the same date in 1928. The 1929–30 supply of California rice, therefore, is considerably less than last season but is still definitely on an export basis.

Present indications are that exports of the 1929 crop will be sufficiently large to result in a further reduction in stocks on hand at the beginning of the 1930 marketing season. The smaller production of rice in Japan in 1929 and the recent stabilization of Japanese currency are favorable factors in the export situation. On the other hand, the low prices prevailing in Asiatic rice-exporting countries may tend to restrict purchases of California rice by Japan, while the large rice crops of Italy and Spain may tend to reduce California exports to Europe and South America.

SUGAR BEETS

According to the federal outlook report the world sugar production probably will continue large and prices relatively low, but apparently the tendency to increase production has been checked and some slight improvement in prices is in prospect. The world production in the current season (1929–30) may be slightly less than that of the past season, but any decrease will be partially offset by the larger stocks at the beginning of the season. The prospect for reduction is in cane-sugar production. The world beet-sugar crop appears to be about equal to that of a year ago. According to present prospects Cuba, Java, and India have smaller crops.

Reports to date indicate that the world raw-sugar production for the present season may be about 3 per cent below the record crop of the past season, but still 4 per cent above the 1927–28 crop. The record of stocks on hand is not complete but available data indicate an increase not quite equal to the prospective decrease in production. In the meantime, world consumption has continued to increase. World consumption for the past season has been estimated at about 30 million short tons as compared with over 28 millions in the previous season. This increase in consumption was, of course, partly due to lower prices.

The world expansion in the production of both cane and beet sugar appears to have been checked temporarily at least. European beet acreage increased rapidly after the war, reaching a peak in 1928. The area outside of Russia in 1928 was more than 20 per cent greater than before the war. Russia has recovered her average prewar area in sugar beets. The area of beets now being harvested in Europe is slightly less than that of 1928. This reduction may prove to be only temporary or it may mark a check in the European expansion of beet-sugar production.

WHEAT

According to the federal outlook report there is little in the wheat situation in the United States and other countries at present to indicate that prices for the 1930 crop of the United States will be much different from those prevailing for the 1929 crop. World stocks will be somewhat lower on July 1, 1930, than on July 1, 1929, but the world acreage will probably not be materially changed and yields per acre are not likely to be so low as in 1929, when they were below

average. World demand for wheat appears to be increasing, although the annual increase may be checked occasionally by unfavorable financial or international trade conditions. This increased demand is due to growth of population and to the tendency to shift in consumption from other breadstuffs to wheat. World production of wheat, however, is keeping pace with the increasing demand, so that there is little prospect for a general upward trend in prices for some years to come. Farmers of the United States, therefore, must expect to meet continued keen competition in export markets from Canada, Australia, Argentina, and later on possibly Russia.

The estimated world total acreage, exclusive of Russia and China, for harvest in 1929 was 245,000,000 acres, as compared with 244,700,000 acres in 1928, and a five-year average of 234,000,000. There has been a tendency to increase acreage in all important exporting countries during the last five years. It is possible that acreage expansion may be checked temporarily by the experience of the last two seasons. Preliminary estimates indicate that the acreage harvested last season in European countries (outside of Russia) was somewhat less than the high figure of 1928. Conditions are not very favorable for expanding the wheat area during the coming yaer in surplus-producing countries competing with the United States. It is possible that Canada will maintain its present acreage, but a low price in the 1928–29 season, followed by a season of low yields in 1929–30 and only moderate prices, may discourage expansion for a short time. Furthermore, the prairie provinces went into the winter with a deficiency of moisture, which may tend to reduce yields below average in 1930 unless the spring season is very favorable. Not much, if any, expansion is to be expected in Australia, where some areas have had a short crop in the season just closing. In Argentina low wheat prices and low yields may tend to encourage shifting from wheat to corn and flax, for corn prices have been good and there is prospect of a good crop, and flax prices are unusually high.

The production of forty-one countries in 1929 (which in 1928 harvested 96 per cent of the world's crop, outside of Russia and China) is now estimated to be 3,272,000,000 bushels, as compared with 3,800,000,000 last year, and the five-year average (1924–1928) of 3,524,000,000. However, the reduced production in 1929 was brought about by reduction in yield and not by reduction in acreage. The average yield per acre for all countries reporting acreages and yields in 1929 was 14 bushels, as compared with 16 bushels in 1928, and the five-year average of 15 bushels per acre. Although there are some indications that yields per acre have a slight upward tendency, it

appears certain that the yields in 1928 were abnormally high, whereas the yields of last season were about as much below average as those of the previous season had been above.

It is probable that stocks will be somewhat reduced by the beginning of the next crop year, July 1. Stocks on farms in the United States on January 1, 1930, were about 50,000,000 bushels below stocks a year ago, but this is largely offset by an increase in the visible supply and mill stocks compared with a year ago. The carryover of old wheat for North America at the close of the marketing year July 1, 1930, will probably be large but if the expected increase in exports over those of this season to date materialize during the next few months, stocks will be less than on July 1, 1929. Stocks of wheat in Argentina and Australia will probably be smaller on account of the very short crops, so that export demand for United States wheat should be better in June, July, and August than in the corresponding months last year. With a smaller carryover, world prices might average slightly higher, but any great improvement in prices could result only from yields below average. Similarly a season of yields higher than average would result in lower prices.

BARLEY

The price of California barley is affected to a considerable extent by the export demand for malting grades as well as by the requirements for feed. Since 1921 the price of export barley at San Francisco has varied inversely with the quantity of barley exported. California exports have declined from an average of 347,000 tons for the three crops of 1921–1923 to an average of 225,000 tons for the crops of 1927 and 1928. This is a decline of 35 per cent. During this same period California barley production has declined only 8 per cent. Information is not available regarding the prospective demand for barley for malting purposes in European countries during the coming year.

According to the federal outlook report, no material improvement in demand for United States barley is in prospect for the crop year beginning August 1, 1930. Prospective numbers of livestock indicate no expansion in domestic requirements, while European prospects suggest only a slight increase in foreign demand. Some increase in hog numbers in several European countries and the likelihood that such bountiful crops of feed grains as were produced in 1929 will not be repeated in 1930, promise somewhat larger European imports of feed grains than during the past season. Such an increase in European

demand for feed grains may be reflected in greater takings of United States barley, although increased competition may be expected from Canada and Argentina where acreage is expanding.

A record acreage of barley in the United States totaling 13,212,000 acres was harvested in 1929. Yields were about 5 bushels per acre less than in 1928 but only slightly below average, and a total crop of 307,105,000 bushels was produced as against 357,487,000 in 1928. Farm and market stocks on August 1 totaled 24,880,000 bushels, compared with 11,147,000 the previous year, so that total supplies of barley were only about 10 per cent below the record amount of last season.

Barley production in Europe in 1929 was about 9 per cent above the 1928 crop and in addition Europe had large oat and potato crops and an exceptionally large corn crop. There was also increased competition from Danubian and Russian barley in European markets during the past season so that imports of American barley were greatly reduced, and there are no prospects of any material improvement in export demand during the remainder of this crop year. United States barley exports from August 1 through December totaled only about 14,500,000 bushels, compared with 41,000,000 bushels for the corresponding period last year. While the 1929 United States crop was about 50,000,000 bushels below the record crop of 1928, most of this decrease has been offset by the increased stocks at the beginning of the season and by the reduced exports, so that the carryover next August now promises to equal the large supplies in store at the beginning of the current season unless there is an unexpected increase in domestic consumption or in exports.

38*m*-2,'30